

Theoretical and Experimental Study on Refrigerants Used in Moderately High Temperature Heat Pump Water Heaters

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This paper puts forward two new working fluids of RTJU3 and RTJU4 used in moderately high temperature heat pump water heaters, and compares them with R22 and R407C at security, environment acceptability, thermodynamic properties and heating cycle properties under changed working conditions, then experimentally tests and theoretically analyzes RTJU3's security and heating cycle performances. The experimental results show that, though RTJU3 is flammable, its fire fatalness is low, and more energy-saving and suitable for moderately high temperature heat pump water heaters than chlorodifluoromethane (R22).